

What is claimed is:

1. An optical encoder comprising a rotary disk plate and a stationary mask plate disposed parallel to each other, and a light emitting element and a light receiving element disposed opposite to each other with respect to a set of the rotary disk plate and the stationary mask plate,

wherein the rotary disk plate has slits formed along a circumferential direction thereof at a given interval, and rotates to intermittently pass light from the light emitting element through the slits such that the passed light has a periodical intensity variation;

wherein the stationary mask plate has apertures spatially shifted from each other, and splits the passed light by the apertures into at least two light fluxes with a given spacing, the two light fluxes having different phases of the periodical intensity variation due to the spatial shift of the apertures;

wherein there are provided at least two light receiving elements which receive the two light fluxes respectively, and generate at least two electric signals having a cycle corresponding to the periodical intensity variation of the light fluxes and having different electric phases corresponding to the different phases of the periodical intensity variations;

wherein the optical encoder further comprises a light guiding member provided between the stationary mask

plate and the light receiving elements to guide the light fluxes from the stationary mask plate to the respective light receiving elements while expanding the spacing between the light fluxes such that the light receiving elements are spaced from each other at a distance greater than the spacing of the light fluxes;

wherein the light guiding member has an incident face to admit the light flux and an exit face to send the light flux to the light receiving element; and

wherein at least the incident face is convexly curved to converge the light flux, thereby efficiently transmitting the light flux to the exit face.

2. The optical encoder according to claim 1,

wherein the exit face is also convexly curved to condense the light flux, thereby efficiently sending the light flux to the light receiving element.

3. The optical encoder according to claim 1,

wherein the stationary mask plate has the apertures which are arranged along the circumferential direction of the rotary disk plate, and which are divided into two groups spaced from each other in a radial direction of the rotary disk plate; and

wherein the two groups of the apertures split the light intermittently passed through the rotary disk plate into the two light fluxes with leaving the spacing

therebetween.

4. The optical encoder according to claim 1,

wherein the stationary mask plate has the apertures which are arranged along the circumferential direction of the rotary disk plate, and which are divided into two groups spaced from each other in the circumferential direction; and

wherein the two groups of the apertures split the light intermittently passed through the rotary disk plate into the two light fluxes with leaving the spacing therebetween.

5. The optical encoder according to claim 1,

wherein the two light receiving elements are both accommodated inside an outer periphery of the rotary disk plate for miniaturization.